PHYSIOTHERAPY AND THE ORTHOPÆDIC PATIENT[1]

By G. G McCloskey, F.R.C.S. (Eng.), F.R.A.C.S.,
and Miss Casanelia

Mr. McCloskey commenced his lecture by explaining that the title of his address encompassed a field too vast to cover in the time at his disposal that night, so he had selected a few cases of interest, in which routine physiotherapeutic measures had played a major part in the treatment.

No new procedures were to be demonstrated but the pathological features of the cases were to be discussed and the manner in which these can be relieved by routine physiotherapeutic procedures.

[1] A combined lecture-demonstration to members of the Victorian Branch of the Australian Physiotherapy Association

The first case was a torn medial meniscus of the knee joint. Miss Casanelia presented the patient and stated that her main reason for introducing Mr. R. first was because he was what she called a "physiotherapist's delight". He was a copy-book example of the condition, and his treatment went exactly according to the book. His progress was quite uneventful but the speed was remarkable. Though he had absolutely no pre-operative training he began static quadriceps exercises immediately post-operatively and soon had full extension and could take heavy resistance after removal of the sutures. He obtained almost full

flexion within two days, without any apparent discomfort, when weight bearing was begun. This was begun gently but there was still no sign of pain or swelling, and so within five days the patient could run up and down stairs.

Miss Casanelia then explained that a patient with either wasted quadriceps or a swollen knee has great difficulty in feeling the action of trying to lock the knee, so the exercise given for knock-knees is a good one, as the patient can really feel it work on the medial side of the joint.

Mr. McCloskey then commented on the interval of time that had elapsed between the original injury and the patient's first attendance. This long delay in receiving effective treatment is common, and during this time the torn cartilage lies folded between the articular surfaces, slowly abrading them. As the knee was already osteoarthritic, this trauma aggravated the arthritis, thereby seriously affecting the ultimate prognosis. The future of this man's knee depends on the nature of the physiotherapeutic care that he receives. If his quadriceps are kept fully developed, by repeated courses of physiotherapy, his prognosis will be reasonably good.

The lay public regard meniscectomy with grave suspicion, as they associate it with subsequent weakness and stiffness of the knee. Provided that there are no technical errors at operation, the bad results that have earned this operation its unfortunate reputation are due either to damage to the knee prior to the operation, resulting in subsequent osteoarthritis, or to inadequate and inefficient post-operative physiotherapy.

An example of the type of case that drifts into this unsatisfactory result was described. This patient tore his left medial meniscus at work, and on the advice of his workmates he immediately consulted an osteopath. Over the next few weeks his locked knee was manipulated three times, but the locking kept recurring. As the final locking occurred on a Saturday afternoon, the services of the osteopath were not available, so the advice of a physiotherapist was sought, who, recognizing the gravity of the condition, referred the patient for immediate medical advice. The knee was grossly swollen and irritated The irritation was allowed to subside with bed rest and then the knee was operated upon. The cartilage was found to be torn in the typical bucket handle manner with the greater part of the cartilage displaced into the centre of the joint, locking it. A large hole was present in the articular cartilage of the medial femoral condyle, caused by the manipulations.

The next case was one of different pathology. On December 1, 1955, the patient twisted his right knee at work and thereafter it slowly became sore, swollen, tense, and warm. A diagnosis of infective arthritis was made and the patient admitted to hospital for investigation. Although the synovial fluid was full of pus cells, repeated cultures failed to grow an organism. An arthrotomy was performed and the joint found to have the appearances characteristic of chronic inflammation. Microscopic examination of the synovial membrane showed the presence of chronic non-specific infective arthritis.

But having made this diagnosis, the treatment was still in question. Mr. McCloskey considers that this condition is so like tuberculosis that, for practical purposes, one can treat it as such. Therefore the basic principles of the treatment of joint tuberculosis were applied, viz.: (i) chemotherapy for 6-12 months, (ii) rest till quiescent, (iii) progressive mobilization thereafter. The chemotherapy consisted of P.A.S. and isoniazid, streptomycin being reserved to cover any possible surgical intervention. Thus the unfortunate patient swallowed 30 tablets a day for six months—some 5500 tablets in all.

Complete bed rest, with the right knee in a plaster cast, was given till the joint was quiescent; then the plaster was replaced by a caliper, permitting progressive mobilization of the knee.

Miss Casanelia then described Mr. C., a man to whom exercises were entirely foreign, and stated that the good result he has today was entirely due to his own hard work. After the long period of immobilization the right quadriceps was very wasted, so, for the first two months, treatment consisted of hard work to the right quadriceps muscle until its strength was almost equal to that of the left leg The patient was

then allowed up in a caliper and mobilization began. This was begun gently, watching carefully for any sign of activation of the disease. The first 70° came quickly and progress then continued at the rate of 2-3° per week. Unlike the mobilization of a fracture where care has to be taken not to apply pressure over weakened areas, gentle even pressure was used to advantage in this case, care being taken to keep within the limit of pain. Fairly strong assistance was given by the left leg in sitting and prone lying. When discharged the patient had a strong knee, with 111° flexion, which was useful enough for him to return to the not so easy task of driving a bus.

The next case was presented for two reasons: firstly, because it was by patient, painstaking physiotherapy that the patient had been rendered fit for operation, and secondly, as an example of Sudeck's atrophy.

X-ray films were shown demonstrating osteoarthritis of the ankle joint, with persistent subluxation, and the decalcification characteristic of Sudeck's atrophy.

With these lesions an arthrodesis of the ankle was inevitable, but could not be done whilst the foot and tarsus were so stiff. So the patient was referred to Miss Casanelia for mobilization of his rigid foot and strengthening of the fallen longitudinal and transverse arches. The dropping of the longitudinal arch was due to outward rotation of the foot, a habit developed by the patient to relieve his pain and to enable him to walk more quickly, as his weight was thus taken off the heads of the metatarsals, which, due to the fallen transverse arch, were resting on the ground. Mobilizing exercises and foot manipulations were given until there was good movement at the talo-calcaneal joint, the mid-tarsal joints, and joints of the toes. Thus, when the arthrodesis is performed, the patient will have a fairly mobile foot, to simulate the movements lost at the ankle joint. Intensive exercise for the intrinsic muscles of the feet and the muscles producing inversion of the foot were practised for some months.

Sudeck's post-traumatic bone atrophy occurs in the hands and feet. It may complicate trivial as well as severe joint injuries. There is pain, complete loss of function, swelling, marked decalcification of the bones, atrophy of the subcutaneous tissues, and tropic changes in the skin However, this syndrome differs in degree only from the ordinary disuse changes following injury if exercises are neglected. It is believed that this condition occurs only as a result of neglected disuse changes. It is therefore a direct challenge to the physiotherapist, both to prevent it and to cure it.

Then followed two cases illustrating some of the manifestations of intervertebral disc degeneration in the cervical spine.

During recent years, cervical disc lesions and degenerative spondylosis have come to be recognized as frequent causes of cervical and brachial neuralgia. These respond well to either neck immobilization or stretching. Although the condition is very common, the underlying cause is very frequently overlooked and the appropriate treatment is not given.

The patient whose trouble is localized to the upper cervical spine complains of attacks of excruciating pain in the back of the head, of sudden onset and aggravated by movement of the neck. The pain is often incapacitating.

When the trouble is localized in the lower cervical spine, pain, paræsthesia, pins and needles, and tingling, are experienced in the shoulder, arm, or hand. Mild cases of this are very common indeed, occurring at night, during the winter months, and disappearing during the day and during the warm weather. These cases respond most satisfactorily to cervical traction, manipulation, and exercises.

Occasionally one sees a severe brachial neuralgia, causing severe incapacity. The second case presented was such a case. The first case was one of cervical neuralgia due to a cervical spondylosis, and treatment consisted of physiotherapy, i.e., heat, massage, and remedial exercise, plus cervical traction. Heat and massage were given mainly to lull the patient into a "false sense of security" before applying the cervical traction, which can be given in several ways. A Sayers sling can be used but is not always practical; or the patient can be placed with his head over the side of a bed, someone holding his shoulders and applying counteraction; or the patient can sit in a

chair, an upward pull being exerted on his head, using the weight of his body as countertraction. Manipulation of the neck and remedial exercises usually produce a good result in this condition.

The next subject discussed was that of low back pain, one of the commonest and most perplexing symptoms encountered in medical practice. Because it is only in a small proportion of the patients so afflicted that any pathological basis can be found, ætiology is largely speculative and treatment is empirical. The majority of patients with low back pain are characterized by having little variety in their symptoms, no specific physical signs, equivocal X-ray appearances, and negligible pathological findings.

Mr. McCloskey said that he had no desire to add to the depressing complexity of this subject but, on the contrary, believed that the patient's interests were best served by taking as simple a view of the condition as possible. It is a well-known fact that our parents suffered from lumbago, that it was a subject of music hall jokes, and that they recovered without undue incapacitation. But today we diagnose a "slipped disc" and the patient resigns himself to a life of painful incapacitation. This pessimistic attitude, common not only amongst patients but among their medical attendants too, causes this incapacity and distracts the patients from receiving the treatment that can relieve their incapacitation.

Therefore, after excluding the presence of organic disease of the spine, it is explained to the patient that his pain is not due to disease or to "discs being out of place" but simply to weakness of his back. The patient can appreciate that discs, ligaments, and muscles can become weak, resulting in chronic strain, which is painful, if this is explained to him. He then loses his fear of the unknown and can understand the rationale of the various physiotherapeutic procedures he is asked to undergo. Thus it is at once obvious to him that active extension exercises will be the fundamental factor in restoring strength to his back. Also he can understand the necessity for wearing a spinal brace to support his back until the exercises strengthen it sufficiently to discard the brace; and he can understand the necessity of manipulation to break down adhesions that have formed in chronically strained joints. The importance of posture and the bad effects of poor posture in producing a chronic strain of his weak back are easily accepted by the patient. And, when it is explained that in the absence of severe or progressive damage to nerves, surgery is not necessary, the patient is much encouraged, for most patients rightly dread an operation upon the back.

Recently a new syndrome, the hypoplastic back, has been described. It is due to disuse atrophy aggravated by faulty posture and occurs in the so-called executive types, i.e., those who spend their time sitting at a desk or at the wheel of a car and never have time to do any real work—doctors, for example.

If one can catch up with these people for long enough to persuade them to have treatment, they respond very well to manipulation and exercises. Unfortunately, they never seem to find time for any treatment except to wear a spinal brace, upon which they become increasingly dependent.

Post-traumatic adhesion formation resulting from direct injury of the back is a condition which also responds readily to manipulation and exercises Miss Casanelia then presented such a case.

Miss S. was a good example of a back suitable for treatment by manipulation under general anæsthesia followed by intensive physiotherapy. Before the manipulation she was treated for a month without any degree of success, her back being rigid, and it derived no benefit from exercise. One month after manipulation she was free of pain and more mobile than she had ever been in her life. The main difficulty had been to convince her to keep moving immediately after the manipulation even though she was sore, so that she would not tighten up again. Massage was a great encouragement here.

The final case was one of acute prolapse of an intervertebral disc. Just as a joint that is injured or twisted becomes swollen and painful and has to be rested until the acute stage subsides and thereafter protected from subsequent injury by development of the muscles controlling the joint, so it is

with an injured I.V. disc. The disc is rested by ordering the patient to bed until the acute symptoms subside. It is then protected from further injury by developing the controlling muscles of the spine with active extension exercises, and by wearing a spinal brace until the erector spinal muscles are strong enough to make this brace unnecessary.

This patient, although appearing to be a very muscular type, had actually a weak back, which, together with the arduous timber lugging job, had caused his condition. Although the most important treatment was hyperextension exercises, heat and massage were of great value also, because these patients are in pain, and these help relieve it, even if only temporarily. If the patient feels that something is being done for his pain, he will try harder with his exercises and one will get far more out of the patient. If one simply says that exercise is the cure for the backache and makes the patient perform for half an hour, he then feels exhausted and probably more sore. Much exercise must be given, by using many exercises, even as many as twenty done a few times each so that patients do not lose interest and then perform them carelessly.